AMERICAN FARMER.

RURAL ECONOMY, INTERNAL IMPROVEMENTS, PRICES CURRENT.

" *O fortunatos nimium sua si bona norint*
" *Agricolas.*" . . . VIRG.

VOL. I. BALTIMORE, FRIDAY, October 29, 1819. NUM. 31.

AGRICULTURAL.

[Communicated for publication in the American Farmer.]

St. Mary's Agricultural Society.

At a stated meeting of the Society at Leonard Town, on Wednesday, the 6th of October, 1819.

Ordered, That the Secretary transmit for publication in the "American Farmer," a copy of the Constitution of the Society—with the form of a Report of the condition of the Farm, or Tract of Land, &c, to be made by each member annually—together with the Essay of Col. Fenwick this day presented to the Society.

Teste,

E. J. MILLARD, *Sec'ry.*

Leonard Town, Md. Oct. 13, 1819.

Sir.—In compliance with a resolution of the Agricultural Society of this county, I transmit you the enclosed papers for publication.

very respectfully,

E. J. MILLARD.

CONSTITUTION.

Art. 1. The Society shall be styled "The St Mary's County Agricultural Society."

Art. 2. The Society shall consist of every individual friendly to its objects, provided he shall first have been nominated and elected by the ballots of two thirds of the members present.

Art. 3 The Society shall have a president, a secretary, an assistant secretary, a treasurer, a standing committee of seven, all of whom shall be elected by a majority of the members present at the last annual stated meeting of the society. And in case of vacancy by death, resignation, or removal out of the county, the same shall be supplied by an election to be made at any stated meeting of the society, the person or persons then newly elected, to serve the remainder of the year.

Art 4. A quorum for business shall consist of at least seven members

Art. 5. At all meetings of the society, the president, or in his absence, such person as the society shall elect protem, shall exercise the usual duties of that office. All motions shall be addressed to him, and on all questions he shall collect and declare the votes. He shall have power to call special meetings of the society, by notice through the secretary at as many public places in the county, as he shall direct. He shall, with the standing committee, have power to correspond with other societies or individuals on agricultural subjects; and with the standing committee he shall attend to and regulate the pecuniary affairs of the society, order expenditures to be made when necessary by their order on the treasurer, whose duty it shall be to make a regular report thereof at the next regular meeting of the society thereafter, which report shall be subject to the ratification or rejection of the said society.

Art. 6. The secretary and by his direction, the assistant secretary, shall have in charge all the books and papers of the society, and keep the same in exact order; they shall also keep on regular files, all letters which shall be written by the president, or standing committee, or by themselves, by order of the comittee, and at the stated regular meetings of the society, submit the same for the further order of the society.

Art 7. The treasurer shall keep the accounts stated on the books of the society, and when called on, produce the same for inspection. But at the last regular meeting of every year, and also whenever his office may end, he shall produce a fair and regularly stated account of all receipts, payments, and expenditures, and deliver it, together with the books and all other property of the society in his hands, or which of right ought to be, to his successor in office, or to the order of the society.

Art. 8. Every member subscribing these articles shall contribute one dollar, or more, annually, for a fund to be applied to the purposes of the society.

Art. 9. The society shall have four regular yearly meetings, and at the following periods: on the second Tuesday in January, on the first Wednesday in March court, on the first Wednesday in August court, and on the return day of the election

Art. 10. It shall be the duty of every member of this society, to keep an account of, and at one of the regular meetings of the society, make a report of his agricultural proceedings, agreeably to such form as may be adopted by a majority of the society, which form of report when adopted, shall become a part of this constitution.

Art 11. The society shall have power to make such rules and by laws for their government, and the management of their affairs, as they shall think proper; and to add to, alter or amend the present constitution; provided however, that no addition, alteration, or amendment to this constitution shall be adopted, without the concurrence of two-thirds of the members present, at one of the four regular meetings of this society.

THE ESSAY OF COL. ATHNS. FENWICK.

On the Advantages of using Cutting Boxes or Cutting Benches.

It is well known that among the greatest defects in southern farming, is the scarcity of provender, and in no other section of country in the state in which we live, is the want of provender more observable, in the general and common condition of cattle, horses and sheep, than in the lower counties, particularly in the winter and spring. Strange as it may appear, this deficiency arises not from any fault in the climate or from the want of fertile valleys, capable of being watered by streams, or by reason of the unfitness of our soil for clover, timothy, sainfoin, lucern, orchard grass, meadow grass and every other kind, common in temperate latitudes; nay, instead of proceeding from difficulties and obstacles presented by nature in less favoured regions, our scarcity of provender arises solely from the too great facilities afforded us by mild winters, wide woodland ranges, fertile uncultivated bottoms, which meander into the heart of this country, branching in all directions from the hundred creeks and rivulets, which fall into the Potomac and Pautuxent rivers and into the Chesapeake Bay, and from the abundance, also, and extent of the salt marses, in many directions fringing the outline of the main land of our peninsula. To these great natural facilities, for preserving our stock of every kind, must be added the excellence and superiority of our principal crops of Indian corn, for yielding grain and provender, above all other crops. These blessings of Providence, affording in such profusion as formerly years a sustenance for our domestic animals throughout the year, together with the habits they have generated and not any unkindness in our climate or soil, are the real cause of the miserable scanty pittance now provided for our stock of all kinds. Before our uplands, commonly called forest lands, had been exhausted, when the common average crop was ten and twelve bushels of wheat to the acre, and four and five barrels of corn, with very indifferent cultivation, on these lands, when the whole amount of live stock was smaller than it now is, which time is within the memory of some of our inhabitants yet alive, as I have repeatedly learned from the most credible sources, there was some excuse, nay, some reason in our forfathers not paying more attention to making a large winter provision of provender, than the corn crop afforded. But now that the unenclosed and unimproved lands also have become parched and arid heaths, and the sun, wind, rain and frost, acting on their naked surface, not to mention the overgreedy and self-destroying system of extortion, and rack-rent practice on every spot of ground, that had any strength, for near two centuries, have reduced ninety acres in the hundred throughout the county, to poverty, incapable of remunerating the labours of the plough alone; we must of necessity exert ourselves, or suffer our stock to perish. Thank all bountiful heaven, the means of renovating our soil, and remedying the deficiencies in our forage and crops are every where around us, and now that we begin to feel as sensibly as we have long seen our folly, we have reason to hope that the means of amending our agricultural condition, will not be neglected.

But before we can avail ourselves of the sources of manure we possess in such abundance, before we can plough deep, before we can practice any of the improvements recommended by the many distinguished farmers here and abroad, and, above all of them in the past or present times, before we can adopt the system of ARATOR, the most valuable book for us that ever was written, we must provide out of the amount of forage on hand enough, to feed well our team of horses and oxen; as without carts, we cannot manure land, and without ploughs, we cannot cultivate it. Our business in the first place, then, leads us to reflect on the best means in our power of increasing our forage, without at present taking into view, how we can better employ our team another year, after we have secured our present crops on hand, in preparing for the mixed course crops.

I will now content myself with showing how the present crop of provender may be managed, to afford a much greater quantity of nourishment for horses, and cattle, and sheep, than an equal amount would afford, used in the wasteful manner, we have heretofore been accustomed to give it out to them. To effect this is so easy and cheap, that every farmer of any condition has it in his power. Experience has proved that corn tops and shucks, wheat, rye, and oat straw, corn blades and hay, cut up with a cutting box or cutting bench, and given to horses, or cattle, or sheep, in troughs, will go a great deal farther, than when they are thrown in racks or on the ground, long and uncut, as gathered, and eaten in that way. The saving, by these means, is so great, that it is worthy of the attention of even such among us, who have the greatest abundance of provender, and to those, who in the usual way of feeding, would not have enough, it would be unpardonable negligence not to adopt the use of them. Mr.

Jacob Gibson, of Sharp's Island, was the first man, whom I remember to have recommended cutting corn tops, to the people of Maryland. It was in a year of great scarcity, and for my own part, I remember I did not make a third of my common crop of provender; but in consequence of adopting Mr. Gibson's recommendation, I actually managed to carry my stock through the winter, with only a third of a crop as well as I had commonly done before with a whole crop without cutting. But I extended his recommendation, and cut up corn shucks, and straw and blades, and every kind of provender I used.

In the fourth volume of the Memoirs of the Pennsylvania Agricultural Society, the experiment of Mr. Isaac C. Jones is given in feeding four horses with cut hay, and his saving was found from his calculation, to be thirteen hundred pounds per month, which for one horse would have been a saving of three hundred and twenty-five pounds per month, and in each day's feed of one horse, a saving of more than ten pounds of hay. In order to form some idea of the importance of such a saving to this county, I will from these data make an estimate as nearly exact, as my means will enable me, of the value of this saving to our population, of giving the amount and value of the hay or fodder saved in pounds weight and money. From the census, we know the population of this county was a few hundred over twelve thousand inhabitants; allowing therefore one-third as many horses as inhabitants, which I guess there must surely be, then there are four thousand horses, at the rate of thirteen hundred pounds of hay saved per month for every four. The saving in feeding 4000 horses, is 1,300,000 lbs per month. This hay at 50 cents per cwt. is a saving of 6,500 dollars per month; and as we are obliged to feed our horses at least five months in the year, this saving in the article of horse food for this county alone, is $32,500. And I think we may fairly estimate that the saving in food of the cattle and sheep, would be more than that; but supposing it only the same in amount, here is a saving of 65 000 dollars in the year's feeding of our stock. And the amount of provender saved in feeding the horses during five months is 6,500 000 pounds, and the same allowed for cattle and sheep, makes the whole saving of hay 13,000,000 lbs. or 6500 tons of provender. This amount allowing a horse to consume two tons of hay per year, would support 3250 horses, that is almost double our present number. Judge Peters states that a man and a boy can cut, with Hotchkiss's cutter, in forty or fifty minutes, as much hay and more straw, as will serve six horses and fourteen or fifteen cows, for the day and night. This, he says, has been proved, by actual experiment. Now let us calculate the value of the time employed by a man and boy, in cutting straw or fodder for six horses and fourteen head of cows. It has been found to be 50 minutes by actual experiment, and the saving per horse per day 10 lbs and upwards, 20 head will give then a saving of 200 lbs. of hay by 50 minutes' work of a man and boy, with Hotchkiss's cutter. And on the supposition, that all farmers cannot get the best cutting boxes, and depend on cutting benches and reap hooks; these I am sure, from what I have seen of them, will do the same work at all events in two hours, and for a man and a boy to save 200 pounds of fodder in two hours, is surely worth more than any other common winter work, or indeed summer work either, that we do on our farms. Is then the force of habit on ourselves, or the reluctance of an overseer or slave to do this work regularly every day, during the feeding season to stop *us*, who feed that number of horses and cattle, *from saving 200 lbs. of fodder every day*, by two hours' work of a man and boy. If such obstacles can overcome our intentions, we must indeed be wofully wanting in energy, industry, patience and constancy, indeed in every manly virtue. Mr. E. J Millard and Mr. B Gough, who each keep a horse in town, have furnished themselves with cutting benches, and find as they tell me a saving of provender, which justifies the foregoing calculations.* Those who think fit have therefore an opportunity of looking at those benches, and examining the kind and quantity they perform. And any carpenter can fit up one if he has the materials, in one hour. This year to that part of the county, which lies above a line drawn due north from Leonard Town to Patuxent River, has been a bad one, and crops must be there shorter than usual. Therefore to all who live in that upper half, the cutting box will prove most valuable, and to the other half, as superabundance is no where to be found, and as the next year may be their turn to suffer by the seasons, it will be found also very serviceable.

Note.—A saving of 65,000 dollars a year would in 20 years amount to the enormous sum of 1.300,000 dollars, and this again, without calculating the interest at the compound rate, would give many millions; therefore if this saving alone could be applied to improving and manuring our lands, the increase in their value would be truly incalculable.

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* *A calculation of the expense of feeding one horse 12 months on chop alone—on chop-hay and corn, and on corn and hay, to wit:*

ON CHOP ALONE.

1000 wt. chop rye straw, at 50 cts.	$5 00
1 gallon chop rye per day, for 365 days, allowing 10 gallons to the bushel, is 36 bushels at 50 cts. is	18 00
	$23 00

ON CHOP-HAY AND CORN.

365 days feed of hay of 5 lbs. per day is 1825 lbs. at 1 dollar per cwt. is	18 25
500 lbs. cut rye straw at 50 cts.	2 50
1-2 gallon chop rye per day for 365 days, is 18 bushels, at 50 cts. is	9 00
18 bushels of corn at 60 cts. is, allowing half gallon per day,	10 95
	$40 70

CORN AND HAY.

10 lbs. hay for 365 days at 1 dollar per cwt. is	36 50
2 gallons corn for 365 days makes 73 bushels at 60 cts. is	43 80
	$80 30

Form of a Report of the condition of the Farm, or Tract of Land, occupied by

Acres.

Whole amount of acres contained in the tract, 000
amount enclosed, ... 000
amount of woodland enclosed, . . 000
Number of divisions—No. of acres in each, .
Number of acres in wheat, ...
Do. do. in corn, ...
Do. do. in tobacco, ...
Do. do. in clover or grass and kind,
Do. do. in common pastures, .
No. of hands—men, women, boys and girls.
No. of ploughs run—No of ploughs on the land, and kind used, and cost, . . .
No. of harrows and kind—No of rollers and kind, ...
No. of carts and wagons, and kind, , .

Amount and manner of Work done.

Preparation for corn No and kind of ploughings, &c.
Mode of planting, distance, &c.
No. of ploughings, &c. after planting.
Preparation for tobacco—No. and kind of ploughing &c.
Size and mode of making plant beds, and time.
Mode of planting, distance, &c.
No, of ploughings, &c. after planting.
Preparation for wheat—No. and kind of ploughings, &c.
Size of beds, of lands, kind of water furows and head furrows.
Mode of covering seed.
No. of cart loads of manure deposited in the corn field, in the wheat field—on tobacco lot.
What kind of manure.
How many hands and carts, and time consumed in hauling the above quantity of manure on each field named.
No. of working horses, mules, oxen—each how fed.
Hogs, No. — how fed—Sheep, No. — how fed.
Cattle, No. — how fed and sheltered.
No. of apple trees—peach do.
Detached work done—how much and what kind.
Fencing, ditching, clearing, wood cutting, building, &c
Small crops, amount of potatoes, turnips, flax, &c.

Internal Improvement.

FROM NILES'S WEEKLY REGISTER.

Qualities of Stiles's Improved Rotary Steam Engine.

1st. By its simplicity and compactness, a Rotary Steam Engine, of 12 to 18 horse power, will require but a space, (say for engine, boiler, and all the steam and water apparatus) 12 feet square; an engine of 60 horse power, 18 feet long by 12 wide.

2d. The pumps to supply hot and cold water, the gearing that works the same, and the pipes that conduct the water and steam, being all much more simple, than those attached to other engines, and being all comprised in one view by the engineer, are, of course, much less liable to be neglected, or to get out of order; and if any thing should be deranged, he can much sooner discover where the defect may be—as, whilst standing beside the engine, he is within arm's length of all the other machinery.

3d. When compared with the engines of Bolton and Watts, Robert Fulton, and Oliver Evans, the Rotary Engine appears incredibly simple, and to all, but the mind of a mechanic, forbids the idea that a machine with so few parts, none of which are likely to get out of order, should operate, when such a multiplicity of parts, and extraordinary weight of machinery, (all liable to be rendered useless by the slightest mismanagement, or trivial accident) are required to produce a similar effect by the other engines.

4th. The Rotary Steam Engine requiring not one half the steam that the others do, its boiler is proportionably smaller, by which the consumption of fuel is reduced to less than one half.

5th. The reduced size and extreme lightness of the Rotary Steam Engine, not only gives it a great preference for vessels, that navigate either inland waters or the open ocean, but enables the factor to put it up altogether, not only avoiding the probability of mislaying or losing any of the small articles, but (whether transported by land or water) is prepared, on its arrival (being previously packed) to be put in operation; whilst other inventions are composed of so many, and such various parts, the loss of the smallest of which, would render the whole machine out of order, and none but a person who has served at the business, can erect or work it; and requires to be sent from the factory so disjointed, as to be totally inexplicable to all but the engineer. Again, if any part of the other engines should be

broken, it would require a mechanist, with a full set of tools, to repair it: but should any part of the Rotary Steam Engine be broken, it must be in that department where a common blacksmith, or a person of any mechanical mind, provided with a hammer, cold-chisel and file, in a few minutes could repair the damage.

6th. Many engines erected in the United States, have remained long idle; some of which have been entirely destroyed, by the engineer being unwilling to remain, or demanding exorbitant wages, from a conviction that the work could not proceed without him; or from the proprietor, ignorant of the qualities requisite for an engineer, employing a person incompetent to the task; but so very few and simple are the parts of the Rotary Engine, that no person of ordinary abilities, can view them a second time, without being fully informed how they operate, and how to adjust any part deranged.

7th. The motion being directly rotary, there can be no fear, on starting the engine, of breaking any thing by a too sudden impulse, which is often the case with other engines, whose crank motion, in mills as well as steam boats, tends to jar and wreck the works attached to them.

8th. Often, in the other inventions, boilers have been bursted, and persons destroyed, by the ignorance or neglect of the engineer; in the Rotary Steam Engine, adjoining the cock that lets the steam on the engine, a safety valve is placed, on which a weight is hung, proportioned to the pressure to be borne by the boiler, and whenever the steam is over that pressure, it will escape without the slightest re-action on the boiler.

9th. The numerous small parts of the other inventions, cannot be expected to last more than six or seven years, without considerable repairs; but there is no part of the Rotary Engine, that will not last for a generation, if preserved from rust, and properly worked.

10th. Many of the other inventions require to be made expressly for the machinery they are to propel, or require great additional works to attach them to any other; but the Rotary Engine made for a saw, a sugar, or a corn mill, can be applied to the one, the other, or all of them, at once; and at the same time that it is propelling at one end of the shaft, either of those mills, the proprietor may have any other machinery attached to the opposite end, without the least detriment; and an engine made for a mill, can be applied to a steam boat without the least alteration.

11th. Whenever the improper feeding of the mill, or some temporary derangement in the works, would render it dangerous to overcome the same—the Rotary Steam Engine will stop itself, until the engineer lets on more steam; but other inventions, aided by a ponderous fly or balance wheel, are, at such times, forced beyond their power, often destroying the most essential parts of the machinery, leaving the remainder a useless wreck to those, whose remoteness from a factory deprives them of immediate aid.

The great difficulty that exists on many sugar plantations, of procuring a sufficiency of fresh water, for the steam boiler, and sugar making, is by this engine and plan of the pumps, overcome; for the boiler, requiring but very little water, the pump, which draws the water from the well, can supply both the boiler and the sugar maker, unless the well be more than 33 feet deep, in which the eccentric motion G, which works with the friction of only one piston, although it performs four distinct duties, can be applied altogether to the steam apparatus, and a crank motion on the same end of the shaft, be applied to a common lifting pump, which can supply all the water required. The expense of such a lifting pump must depend on the depth of the well; the gearing would be very trifling.

An engine, boiler, and all the steam apparatus requisite (for a boat) for twenty horse power, would not weigh 7000 pounds; and one of sixty horse, including the weight of water in the boiler, &c. would not exceed 12 tons weight.

The subscriber has at his factory in this city, complete sets of paterns for engines, from eight to seventy-five horse power, and can execute any orders for steam boats, mills, &c. in the space of from six weeks to four months; as also orders for sugar, corn, or saw mills, with or without steam engines. JOHN S. STILES.

Fig. 1

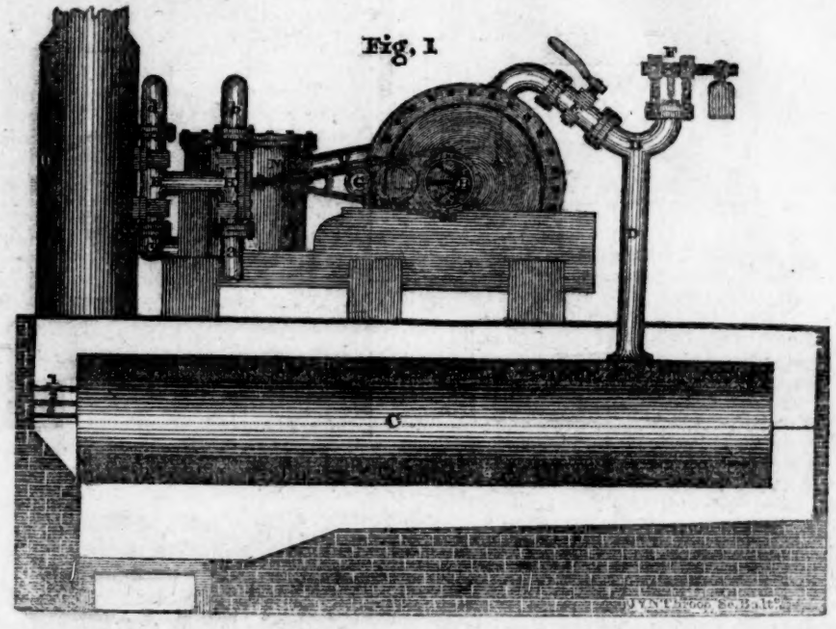
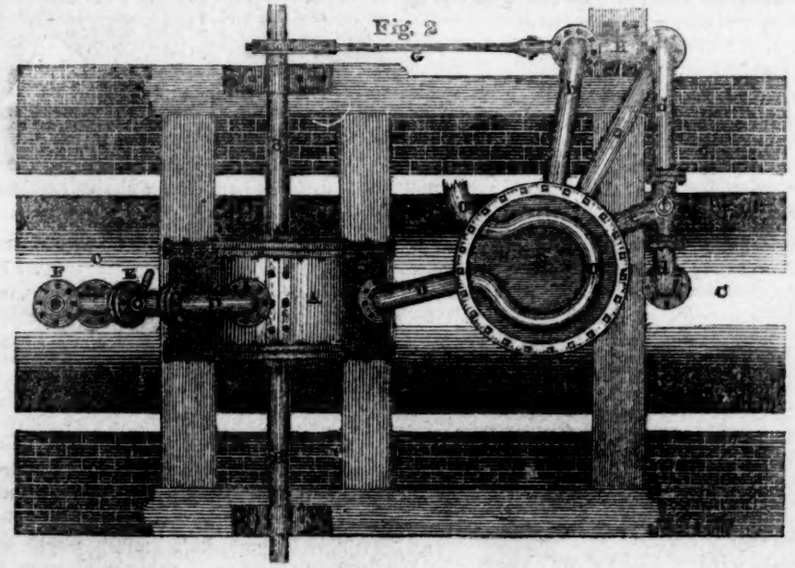


Fig. 2



Explanation of Stiles's Improved Rotary Steam Engine, with a Horizontal Sugar Mill attached.

A The engine (in Fig. 1, 2, and 3) is a cylinder containing a proportioned steam wheel, to which are attached valves, which valves are operated on by the steam, and give a rotary motion to the shaft, the steam then goes off into the condenser, or hot water chest, N, through the pipe O, and having heated the water, then passes into the open air, or where the proprietor may wish.

B The steam shaft passes through the cylinder and the wheel, and receives its motion from the latter.

C The boiler communicates the steam to the engine through the pipe D, in which pipe are fixed the steam cock E, by which the steam is let on or shut off; and the safety valve F, which permits the steam, whenever it raises above the

Fig. 3

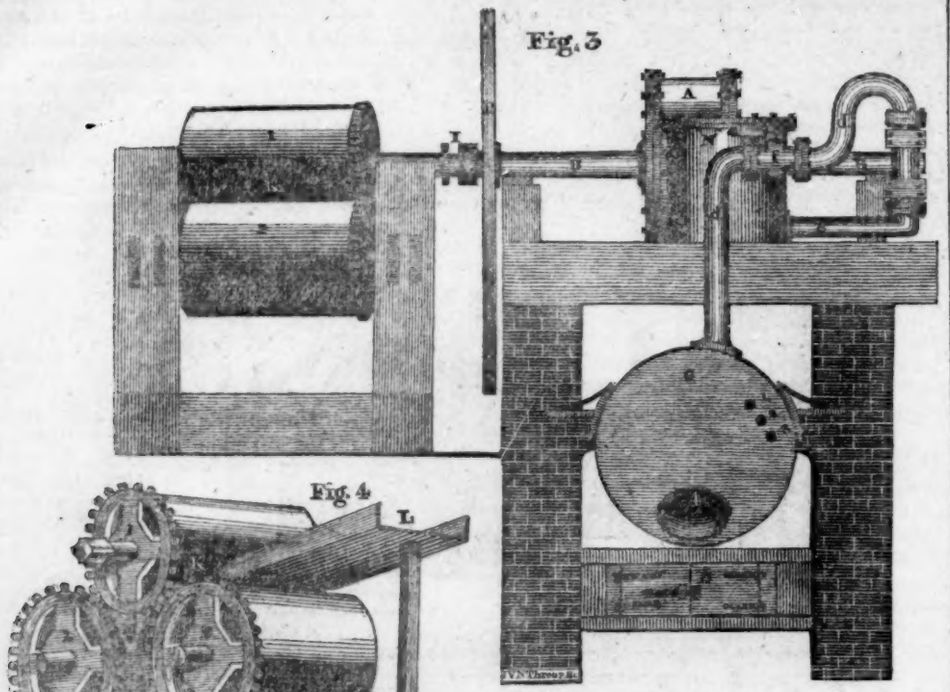


Fig. 4

Fig. 5

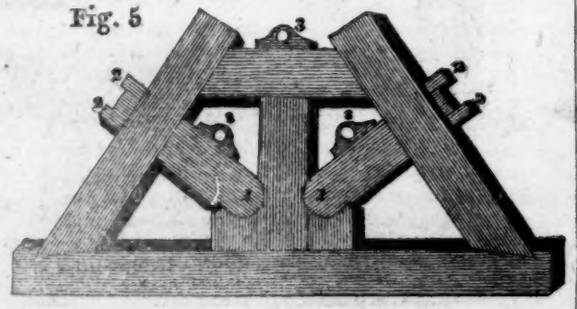


Fig. 1, is a side view of the Engine and Steam apparatus.
Fig. 2, is a top view, or ground plan of the same.
Fig. 3, is an end view of the Engine, &c. &c. with a sugar mill.
Fig. 4, is a view of the sugar cane rollers &c. &c.
Fig. 5, is a view of the sugar mill frame.

required pressure, to escape without the slightest re-action on the boiler, and thereby relieving the mind from every apprehension of the boiler bursting.

G The eccentric motion on the shaft B, works the pump H, which performs four different duties, viz:

1st. By the pipe a, it draws the cold water from the well.

2d. By the pipe b, it injects the same into the hot water chest N.

3d. By the pipe c, it draws the hot water from the hot water chest, and

4th. By the pipe d, it injects the same into the boiler. f Is a cock by which the water from the pipe d, when not required in the boiler, can be returned to the hot water chest by the pipe e, without stopping the engine, or ungearing the pumps, so that any quantity of water may be lifted out of the well for any other purpose than supplying the boiler.

I The coupling box connects the shaft of the engine to that of the sugar mill.

K The sugar mill (in Fig. 3 and 4) is composed of three rollers, viz.: two are placed horizontally and parallel, and the other is placed in the upper cavity, produced by the two first, viz.; 1, the driving roller, receiving its motion from the engine, and communicating the same to 2 and 3 by the cog wheels, is 22 inches diameter, and 36 inches long; 2 and 3 are 26 inches diameter, and 36 inches long.

L In fig. 4, is a trough, in which the cane being put, is conveyed in between the rollers 1 and 2, and then by the conductor M is caused to pass between the rollers 1 and 3. There are sufficient spaces between the conductor and the rollers, for the juice to pass into the vat beneath.

P In Fig. 3, Is a small wheel or lever, by which to start the engine, when newly packed.

Fig. 5. The rule joint 1 is for the purpose of permitting the wedges 2 to raise or lower the rollers, to grind the cane fine or coarse. 3 are the bearings and brasses in which the rollers work.

Fig. 1 and 3—1, 2, and 3 are the gauge cocks, by which to ascertain the quantity of water in the boiler. 4 is a fire place through the boiler. 5 are the furnace doors. 6 is the chimney.

FROM THE NEW YORK COLUMBIAN.

An account of the very important discovery lately made by professor Thenard of the College of France; being a method to charge water with oxygen, equal to nearly seven hundred times its own volume; with the history of the properties of water so enormously oxygenated—in a letter from Major John M. O'Connor to John Watts, M. D.; and communicated to Samuel L. Mitchell for the society for Internal Improvement.

Paris, July 11th, 1819.

My dear Sir—Knowing the interest that you take in all the discoveries and improvements, more especially in such as are even very remotely connected with your profession, I cannot deny myself the pleasure of communicating to you a discovery in chymistry of a very curious and extraordinary nature.

Mr. Thenard, Professor of Chymistry at the College of France and at the Polytechnick school and author of perhaps the best treatise now extant on Elementary and Practical chymistry, has just discovered that water is capable of absorbing or retaining in suspension a quantity of oxygen, nearly equal to its capacity of saturation of the gas acid fluoric; that is nearly equal to 700 times its own volume. The water thus saturated with oxygen, possesses very extraordinary qualities, chymical and philosophical. The origin of this discovery you will deduce from the process of obtaining the new body.—I will attempt to describe it, from recollection of the lecture and experiments of Mr. Thenard, delivered at the College of France a few days ago. I believe the memoir has not yet appeared in print.

Take a large tube, well luted exteriorly, fill it with baryte (*protoxide* of barium,) establish it across a furnace, so that its two extremities shall extend beyond the furnace; put one extremity in communication with the pneumatic table, and a reversed recipient filled with water, by means of a curved tube; and let the other extremity communicate with bladders filled with oxygen, or with vessels from whence is constantly disengaging oxygen in sufficient quantities, as from the *peroxide* of manganese &c. The protoxide of barium being red hot, the bladders are gradually compressed, or the reduction of the per-oxide of manganese is begun; the whole of the protoxide is thus converted into dent oxyde of barium, which is taken from the tube and deposited in a recipient containing a given quantity of water. A current of gas acid, *hydro chloric* (commonly called acid muriatic) is now forced to pass into the recipient, and gives birth to a new body, hydro chlorate of *protoxide* of barium; acids, as you well know, do not combine with the dentoxide of barium; they always reduce it to protoxide. The oxygen thus disengaged from the dentoxide does not escape, but in consequence of the presence of the salt, remains in suspension or combination, (if you please) with the soluble hydro chlorate and water. The hydro chlorate is next converted into sulphate of baryte, by pouring into the recipient a proper quantity of sulphuric acid; as the affinity of baryte (protoxide) is greater for the sulphuric acid than for any other, and as the sulphate of baryte is insoluble, this decomposition and recomposition is readily effected, and the sulphate easily separated

from the water by filtration. The water now contains only the acid hydro chloric and oxygen, for during the latter operation there is no disengagement of ogygen. This composition and decomposition of hydro chlorate and production of sulphate of baryte may be repeated even 30 or 40 times, till the water is perfectly saturated with oxygen. The quantities of the respective bodies being determined, that of the oxygen in suspension or combination with the liquid acid muriatic, you can readily discover from the laws of the composition of salts and oxygen. The only difficulty is to separate the acid hydro chloric from the water and oxygen. This is effected by the addition of a suitable quantity of nitrate of silver, which is instantly decomposed by the acid hydro chlorate, and converted into prochlorate of silver, which being perfectly insoluble in water, is easily separated from the mixture of liquid, nitric acid and oxygen, now remaining in the recipient.

The nitric acid is next separated from the water and oxygen by an oxyde capable of forming an insoluble sub-nitrate, or by an excess of potash perfectly free from extraneous bodies, and cristillized by frigorific compositions. The water and oxygen is thus obtained pure; for during all the compositions and reductions, no sensible quantities of the gas has been disengaged. In this state, the water contains about 120 or 130 times its volume of oxygen; its density is greatly increased; and what is remarkable, its tension is diminished.

The next process is to concentrate the new compound, by separating it from as great a quantity of the aqueous fluid, as possible; this is effected by means of the pnuematic pump. The vase containing the per-oxygenated water is placed under the recipient of the pump, on a stand in the middle of a broad vessel, containing very concentrated sulphuric acid; and the pump is put into motion, until the mercury of the eprouvette or manometer of the pneumatic machine, is within two or three millimitres (about 1 line) of the level. To produce so great a rarefaction, of course, the very best machine must be used. The greater part of the water is thus evaporated, and expelled through the valves, or absorbed by the powerful affinity of the sulphuric acid for the aqueous fluid; the per-oxygenated water is thus concentrated, until it contains 600 times its volume of oxygen gas, and its specific gravity is greater by one half than that of water. The extraordinary diminution of the tension of the per-oxygenated water, so opposite to all other combinations of water and gas; the latter, however great its affinity for the water, disengaging itself immediately in vacuum, or when in ebullition, is not the least remarkable part of this new body; its oxygen is, however, immediately disengaged by ebullition. Probably the excessive cold produced under the recipient, facilitates the concentration of the new compound, by destroying its tension.

Its action upon the animal economy, is very great; the smallest drop instantly whitens the skin, raises a huge blister, and produces a severe momentary pain. In this respect it somewhat resembles the gas acid fluoric; but is not so dreadful and inevitable a poison as this latter; it seems merely to destroy the cuticle of the part. Doubtless if taken interiorly, it might be attended with serious consequences. It is, however, instantly decomposed, and the oxygen totally disengaged by the substances of the *organs* of the human body, such as the nerves and muscles, the liver, the spleen, &c. and by all *metals* and *oxides*. In the decompositions no new body is formed, the oxygen is expelled with loud explosion, and the animal, metallic, or oxided substance is withdrawn in the same state that it was introduced into the base. It would be extremely dangerous to operate upon a considerable quantity at a time, since its expansive force resembles that of gun-powder. The simple non-metallic bodies have no effect upon it at the ordinary temperature; but the case is very different with many of them, such as carbon, sulphur, &c. at an elevated temperature; explosion ensued, accompanied by the formation of gas, acid, carbonic, sulphurous, &c.

The action of light and radiating caloric, is nugatory on this new body; and most probably the loadstone is also without influence. We must therefore conclude, that its reduction by metallic oxydes, and animal organic substances, is the effect of electrical actions, or of some other fluid at present unknown. It is without action on vegetable colours, and combines with no oxyde to form a salt; it cannot, therefore, be regarded as an acid, since it is destitute of every characteristic of an acid, except the common acidifying principle—the oxygen. When left long exposed to the air, it loses a great portion of its oxygen.

Thus it is found that the admirable experiments made by baron Humboldt and G. Lussac, in 1805, on the affinity of water for air and oxygen which they found did not exceed $\frac{1}{2}\frac{1}{3}$th part of its volume of the latter, and $\frac{1}{30}$th of the former, at the common temperature, and under the ordinary pressure of the atmosphere, and to be totally null in vacuum, are only true in the simple contact of water with air or oxygen. The presence of an acid entirely changes the affinity. I forgot to mention, that when the decomposition of the per-oxygenated water is taking place by the influence of the metal oxyde, or organic substance, the addition of an acid suddenly arrests the reduction, and gives stability to the new compound. Hence it appears, that only those bodies that are attracted to the negative pole of the voltaic battery, are capable of reducing this singular compound.

Doubtless this discovery will excite the interest and curiosity of our American chymists and philosophers. I invite you to communicate the facts to the New York Institute, and to your learned friends. The narrow limits of a letter preclude me from entering into further details. The facts here stated I was myself a witness to. Mr. Thenard made all the experiments, in our presence at the college of Fana, with that ability and zeal for which he is so highly distinguished among the ablest chymists of the age.

Mr. Guy Lussac has lately discovered that the reduction of the per-oxyde of manganese by the sulphuric acid, does not produce a sulphate, as was hitherto supposed; but gives birth to a new acid, (and of course to a new salt) inferior in the quantity of its acidifying principle to sulphuric acid, and holding an intermediate station between the sulphureous and sulphuric. He has proposed to call it by hydro sulfuric; but Professor Thenard has denominated it sulphnat, by a new termination in *ant* of the generical word, agreeably to the genius of the chymical nomenclature. I forgot how far that great chymist and philosopher, Guy Lussac, participated in the discovery of his colleague Mr. Thenard.

Extracts from a Compendious Dictionary of the Veterinary Art.

(Continued from No. 29—p. 183.)

Brain. The intimate though invisible connexion between this important organ and the stomach, causes its functions to be often disturbed both in horses and other animals; thus in cases of indigestion, the brain is the part that appears to be principally affected; it is sometimes, however, diseased independently of the stomach; and the affections to which it is most liable are inflammation and dropsy. The former complaint is indicated by violent delirium, redness of the membranes of the eye, and strong pulsation of the temporal arteries; the animal often becomes quite furious, so that it is dangerous during the paroxysm for any one to approach him; after a little time, he generally becomes quiet and sometimes lies down apparently in a dying, state; the delirium returns, and he becomes more violent perhaps than at first. In this way the animal sometimes continues one, two, or even three days; when suppuration takes place in the brain, nature becomes exhausted, and death puts a period to his suffering. I have often had occasion to remark, that in all cases of internal inflammation copious and early bleeding is the grand, the essential remedy. In this case, however, it is, if possible, more particularly necessary; and the most ready way of obtaining a speedy and sufficient evacuation is by opening both temporal arteries, and allowing them to bleed until the animal becomes perfectly quiet, or even faint. If this cannot be accomplished, both jugular veins should be opened, and the bleeding continued by tying a cord round the neck so tight as to keep up a constant flow of blood from both orifices; but the cord should never be applied until the veins have been opened. (See *Bleeding*.) To prevent a recurrence of the disease, a dose of physic should be given; and it will be necessary for sometime afterwards to feed him rather sparingly, principally with bran mashes or green food.

Dropsy of the Brain does not often occur to horses or cows, but sheep appear to be more liable to the disease than other quadrupeds. The symptoms of the disorder in horses are variable. In one case there was a considerable degree of dulness and heaviness about the head, the pulse not much affected, loss of appetite: the animal appeared as if suffering much pain in the head, generally keeping it lower than the manger; these symptoms were followed by delirium, convulsions, and death. In another case, where probably the water had accumulated very gradually in the cavities of the brain, the horse appeared to be free from pain, except when put suddenly into brisk motion, when he would fall down in violant spasms; the fit seldom lasted

above a few minutes. The horse, being of scarcely any value, was destroyed, and, upon examining the brain, about six ounces of water were found in its ventricles or cavities. In the treatment of this complaint, Mr. Blaine recommends diuretics and mercury, with a view to procure an absorption of the accumulated fluid; perhaps, in an early stage of the complaint, a strong mercurial purgative, assisted by a blister to the head, and a rowel between the branches of the under jaw, may remove the disorder; but at any later period, there does not appear to be any chance of a cure. Sir George Mackenzie has described two kinds of this disease, which sometimes happen to sheep; the first consists of an accumulation of water in the ventricles of the brain, which is considered to be incurable; the other, which is most common arises from animalculæ called hydatids. In this case, the water is contained in cysts or bags, unconnected with the brain, on which, however, if not prevented, it acts fatally by pressure; very soon after water has begun to collect, either in the ventricles or cysts, the animal subjected to the disease shows evident and decisive symptoms. It frequently starts, looks giddy and confused, as if at a loss what to do. It retires from the flock, and sometimes exhibits a very affecting spectacle of misery. Various methods of relieving the pressure of the brain have been proposed, and, when put in practice by patient and skilful hands, most of them have succeeded; but a method has been found of perforating the cyst, which has succeeded perfectly in numberless instances: this operation consists in "thrusting a piece of wire or a knitting-needle up the nostrils, and forcing it through the skull into the brain." (*A Treatise on Sheep*, by Sir George Mackenzie.) The brain is subject to other diseases, which do not appear upon dissection, to depend upon any alteration in its structure, upon inflammation, or upon an accumulation of water in its cavities. See *Epilepsy Giddiness*, and *Megrims*.

Braxy or Sickness. A complaint very common upon sheep, which, in Scotland, is termed *watery braxy*; they describe also a dry and a costive braxy. The former is said to depend upon a retention of urine, caused by feeding too freely on succulent diuretic food, and resting too long in their lairs in the morning. The disease, therefore, may be prevented by avoiding too free a use of such food, and by moving them from their lairs on pens early in the morning, in order to encourage them to passs their urine. All diuretic medicines are of course highly improper in this complaint. The costive braxy is said to be produced by eating hard dry food, drinking cold water, when the body is overheated, or its being plunged into water while in that state; or suddenly drenched with rain or chilled by a shower of snow. In this kind of braxy, a dose of salts, about two or three ounces, glysters, and bleeding are the proper remedies. The dry braxy appears to be an inflammatory affection, particularly of the bowels, for which bleeding, castor-oil, and glysters are suitable remedies.

Breaking down. An accident that often happens during violent exertion, as in racing. According to Mr. Blaine, it depends upon a rupture of the suspensory ligament of the leg. This accident, I believe, occurs but seldom, and the injury thus named, is more commonly a severe strain of the sheath of the flexor tendon or back sinew. (See *Strain.*) When the ligament is ruptured, it may be known by the increased obliquity of the pastern; the fetlock joint, when made to sustain any weight, being bent nearly to the ground. The animal, however, retains the power of moving the pastern, which would not be the case, if the tendon were ruptured. A perfect cure can hardly be expected in this case, though the horse may be rendered serviceable for the purposes of agriculture. The ends of the ruptured ligament are to be brought as near to each other as can be, in which situation they are to be kept, until a re union has taken place. There will be some difficulty in accomplishing this; a high heeled shoe would perhaps contribute materially towards it; the bandage, which must be employed on the occasion, should be kept constantly wet, with a solution of acetate of lead in cold water. After some time, when it may reasonably be presumed that a re-union has taken place, the heels of the shoe should be gradually reduced.

Broken knees. After washing the wound carefully with warm water, apply a poultice if the injury is considerable, and renew it morning and evening, until the swelling and inflammation of the knee have subsided; stimulating applications will then be proper; such as a solution of sulphate of copper (blue vitrol,) or sulphate of zinc (white vitriol.) When the wound does not appear to heal under this treatment, try the following ointment:

Ointment of yellow rosin, four ounces.
Oil of turpentine, two drachms.
Red precipitate finely powdered, half an ounce.—Mix.

Should the new flesh rise above the surface, sprinkle on it some finely powdered burnt alum. In slight cases of broken knee, it will be sufficient to wash the part several times a day with a cold solution of acetate of lead (sugar of lead,) about one ounce to a quart of water; this in two or three days will remove any inflammation or swelling the blow may have produced; camphorated murcurial ointment may then be applied to hasten the growth of hair on the part.

(*To be continued.*)

FOR THE AMERICAN FARMER.

DOMESTIC INDUSTRY.—*No. V.*

Baltimore October 16, 1819.

Mr. Skinner,—From Spain, let us now turn to England, that little spot, which, including Wales, contains thirty-eight and a half millions of acres; and of these about eleven and a half are in a state of cultivation; that is, little more than one-third the extent of Pennsylvania. Here we find a population of ten millions, not more than four of which are employed in agriculture. It appears, however, that in the year 1810, the amount of profits arising from farming, was twenty-nine and a half millions of pounds sterling, or one hundred and thirty-one millions of dollars Of the remaining six millions, at least five-sixths live by trade and manufactures; and the effects produced at home and abroad by the latter, may be partly estimated from the following facts.

In the year 1800, it appears from public documents, that fifteen millions of pounds sterling worth of cotton goods were manufactured in England, from seven millions worth of cotton wool; and that the manufacturing wages thereon, amounted to six millions four hundred thousand pounds, and employed four hundred and twenty-seven thousand persons.

The wool manufactured the same year, was valued at six millions sterling; and the articles manufactured from it, at eighteen millions. The manufacturing wages amounted to nine millions, six hundred thousand pounds. The hardware manufactured the same year, in Birmingham and Sheffield alone, amounted to three millions, and two hundred thousand pounds; of which one-third came to the United States. It should be observed that these are the *official* or custom-house values, which is only two-thirds of the market price. We will only add, that the same year's amount of pottery was valued at two millions sterling, and employed from thirty-five to forty thousand persons.

Let us now take a view of *both sides* of the cotton trade between this country and England. In 1810, the quantity of cotton imported into England from the United States, was fifty-five millions, one hundred and ninety four thousand, six hundred and sixteen pounds. And the average price that season was about sixteen cents per pound; consequently the amount was about eight millions, eight hundred and fifty-one thousand, one hundred and thirty-eight dollars. Now the amount of cotton goods imported from England the same year, was six millions, six hundred and sixty-seven thousand, six hundred and eight pounds sterling, official value, or ten millions, one thousand, four hundred and twelve pounds, market value, equal to forty four millions, four hundred and fifty thousand, seven hundred and twenty dollars; from which if we deduct the amount of the raw material, there will remain a balance of thirty-five millions, five hundred and ninety-nine thousand, five hundred and eighty-two dollars, in favour of England. Such is the result of selling raw materials, and bringing the articles manufactured from them. Such are the means by which England supports her extravagance, and makes every nation, that deals with her, tributary. Such she has made Spain and Portugal; and such she will make some others, if they do not look better to their own interest, than they have done. Again, we have seen that fifteen millions worth of manufactured cotton goods employed four hundred and twenty-seven thousand persons for a year; and that in one year we have imported six millions, six hundred and sixty-seven thousand, six hundred and eight pounds sterling, which bears the same proportion to fifteen millions, that one hundred dred and eighty-nine thousand, seven hundred and seventy-seven does to four hundred and twenty-seven thousand; hence it appears, that our importations of British cotton goods alone, give employment to one hundred and eighty-nine thousand, seven hundred and seventy-seven persons in England!! And cost us, over and above all the cotton she buys from us, thirty-five millions, five hundred and ninety-nine thousand, five hundred and eighty-two dollars per annum. If a like view were taken of the woollen, hardware, earthenware, and glass, we would be so far from being surprised at the scarcity of

money amongst us, that the only wonder would be, how any was left.

Let not the American Farmer think these are matters, with which he has no concern. He is as deeply interested in them, as any other in the community. If the country be impoverished, he must suffer with the rest. Without capital, he cannot carry on his business any more than the merchant; and surely he cannot expect a profitable foreign market, when wheat is coming from Europe, and selling in our ports at fifty cents per bushel.

Yours, &c. COGITATIVUS.

Occasional Extracts.

MR. SKINNER,—As it is of some consequence to our agriculturists and to all the labouring classes, who employ wheel carriages, that they should be easily moved; allow me to present a few observations on the structure of the wheel in common use, which seems to be a little in opposition to easy motion, and rather unsuspectedly aiding the vis inertiæ of the several machines intended to be moved. It may be a gratification to the ill-willed disposition of some, that our chariot wheels drive heavily; but even in them tenderness for the animals which drag them, as well as our interest in both the carriage and the creatures, requires that we should look a little to the matter.

The wheels of all the carriages I see, except the wheel barrow, are made with the spokes obliquely fixed in the hub to the fellow, or from the centre to the circumference of the wheel, by which means a hollow is made from the rim to the hub, and this is called dishing. The consequence is that the wheel being made a section of a cone or a sugar loaf, never rolled directly forward, but declines outward from both sides and must be dragged by force in a straight line against this tendency. Hence the labour of drawing the carriage is increased, the violence done to the wheel and body is greater; consequently a less burden can be carried with the same force, and the carriage is more shaken and worn, than if the wheel was made with the spokes fixed straight or perpendicular from the hub to the rim.

Let any one attempt to roll a sugar loaf, he will immediately see that instead of going forward, if left to itself, it will revolve in a circle; and if he has a mind to make it go straight forward, he must add a force proportioned to the weight to drag it forward. It will be the same with every section of the sugar loaf from end to end; each round cut off will still attempt when moved to form a circle. If the circumference of a dished wheel was extended in parallel lines agreeably to its inclination, it would end in a point, and make a cone, the shape of the loaf of sugar. Take then a carriage wheel formed as they are at present, and roll it from the hand upon a level surface, it will be presently seen that it runs to one side, and if there is room and sufficient impulse given, it will run fairly round. When two wheels are fastened at the ends of an axle, they incline different ways, and a constant struggle is maintained to draw them forward, which when the weight is considerable can only be done by a great power. In a wagon carrying a ton or more, it will require an additional horse. But other inconveniences follow; the roads are more broken, the carriage shaken, &c. Indeed, I sometimes think the great dishing of the wheels may be known at a distance by the noise and dust that is raised.

This mode of forming the wheel, like every other received practice, has its advocates. The wheelwrights say the wheel is stronger, that it casts the dirt better off the body; and that they make the surface upon which the wheel rolls, so flat and level that it does not take the motion sideways. But they are not aware that the making of the top line flat will never correct the effect of the figure of the wheel. Let then the matter be tried, and as far I am informed by an experiment recorded in the proceedings of the board of agriculture of England, and a small trial at home, the difference between wheels, constructed upon the principles here mentioned, will immediately appear, though its plainness may not convince the farmer or mechanic, as I have found by experience. J. M.

Baltimore, Oct. 16, 1819.

ON THE CULTIVATION OF ONIONS AS PRACTISED IN NEW ENGLAND.

New London, Ct. Oct. 23, 1819.

MR. SKINNER,—I observed in your valuable American Farmer of the 15th inst., a request from a correspondent, that you would "publish an account of the method of cultivating the onion in New England." Believing that your correspondent would not have made this request without thinking the information required would be beneficial to himself and his fellow-citizens, I send you the following account of the manner of cultivating this valuable root in Wethersfield, in this state. The onions of Wethersfield, have been considered, and I believe justly too, superior to any others raised in New England. The soil of Wethersfield is a rich damp mould. Almost every family has a garden containing from a rood to two or three acres; and sometimes six or eight. The longer gardens have been planted with onions, the better they are considered; on the other hand, a new garden, however rich the land may be, will hardly ever produce half a crop.

Early in the spring the ground is heavily manured—dry gardens, with ox manure; and those on low lands, with that of horses, the manure well rotted. Soon after the frost is out of the ground, the gardens are ploughed, [a spade is never used] the land is then thoroughly harrowed; after which the beds are laid out [by a plough drawn by a horse generally] about four and a half feet in width. These beds are intersected with allies across the garden, as often as suits the taste or convenience of the owner. The beds are then made with a rake and hoe of an oval form—a marking rake is then made use of, for marking the proper distances of the rows, and for making an opening to receive the seed. This rake is like a common rake, with the exception, that it only has four teeth about eight inches distant from each other. The rows are always made across the beds. After the marking is performed, a woman follows [for almost every thing in raising onions, is done by the women] and sows the seed, by taking a pinch of the same from a dish she carries with her, and distributing it properly through the trench made by the rake, she then covers it. About three weeks after sowing, the onions must be wed; this is done after hoeing between the rows; the weeders then carefully take the weeds from among the onions, and bring fresh dirt to them. The onions must be wed four or five times in this manner during the summer. When they are sufficiently ripe for gathering—their tops being dry and fallen, they are pulled and stripped [tops cut off] and carried out of the way of the rains; they are then brushed and are ready for market.

I am apprehensive that this sketch will contain little, if any, new information; nevertheless, this is the "method of cultivating the onion in New England."

The profits of raising onions in good seasons are considerable. An acre of ground well cultivated, I presume, will produce four thousand bunches; you can calculate what they would be worth.* I remarked before, that most of the labour in raising onions is performed by women. It is even so, and there are but few ladies in Wethersfield that think the employment beneath them. Nor does the employment at all tend to debase or darken the mind. I will leave it to any good judge, whether the ladies of that town are not as easy in their manners, as interesting in their conversation, and as elegant in their appearance as those of any other place.

You see, Mr. Skinner, that I am an advocate for industry; not that industry which induces a lady to spend six months in working a ruffle, but that which adds something to the common stock of human blessings.

Wishing you success in your present arduous undertaking, that of disseminating knowledge on the noble science of agriculture, I subscribe myself, respectfully,

Your obedient servant,
SIMEON FRANCIS.

* Four hundred dollars in this market.—*Edit.*

ENGLISH AGRICULTURE.

MR. SKINNER Looking over a file of English News Papers the other day, I met with the following in the Norwich, Yarmouth, and Lynn Courier of May 1st. last, which I transcribe for the information and example of such as look up with reverence, and give the preference, as they ought undoubtedly, to every thing from the mother country. The new system of manuring ground, originated, no doubt, in the abundant crops produced on the fields of Waterloo, since the battle. I should be glad if some one of your numerous correspondents would inform us of the origin of the ingenious mode of increasing the produce of apples. IGNORAMUS.

A correspondent from Grimsby, referring to the arrival of several vessels at that port from the Continent with bones, observes, that the eagerness of English agriculturists to obtain this manure, and the cupidity of foreigners in supplying it, is such as to induce the latter actually to rob the sepulchres of their forefathers. Bones of all descriptions are imported; pieces of half decayed coffin tire are found among them; and those skilled in anatomy have no hesitation in pronouncing many of the bones to have belonged to human beings!

SINGULAR CUSTOM.

The southern part of Devon is remarkable for its excellent cider. For the purpose of ensuring a good fruit harvest, the following custom is almost universally kept up in that part of the country. On the eve of the Epiphany, the farmer attended by his workmen, with a large jug of cider, repair to the orchard, and encircling one of the best bearing trees, they drink the following toast three several times:—

Here's to thee, old apple tree;
Whence thou may'st bud, and whence thou may'st blow!
And whence thou may'st bear apples enow!
Hats full! caps full! bushel bushel, sacks full!
And my pockets full too! Huzza! huzza!

Some are so superstitious as to believe, that if they neglect this ancient custom, be the weather what it may, the trees will bear no apples that year.

THE FARMER.
BALTIMORE, FRIDAY, OCTOBER 29, 1819.

A hint—every farmer should occasionally spread on his manure heap and farm pen, through the winter, a bushel or two of plaster—we are assured that fer-

mentation quickly ensues, and putrefaction is so rapidly promoted, that the manure is in much better order for use in the spring—so says *experience*.

To numerous applications for Chile wheat, that we should have been happy to gratify, we must answer that we have none. However, it is now well distributed and in a fair way for experiment—another year will test its qualities, and enable all who may desire it to cultivate it.

☞ We respectfully request those who have generously taken an interest in the success of this paper, to use their influence to add to our list of subscribers—if each subscriber we have now would only add *one* name more, we could promise them an engraving in *every number* of some useful machine or agricultural implement of domestic invention, or taken from foreign publications. This would greatly enhance the expense of the work, but it would also very much enhance its value, and the Editor is very anxious to accomplish it if possible.

Western Canal.—A letter to the Editor of the Northern Whig, dated at Rome on the 27th ult. mentions, that the water is now in the canal for the distance of nine miles, commencing about four miles below that village; and that the commissioners and engineers have passed in boats drawn by horses, upon the canal, upwards of eight miles. The writer adds, that "before the close of the season, salt will undoubtedly be carried from Salina to Utica by means of the canal."

POOR RICHARD'S ALMANAC.

*The way to wealth, as clearly shown in the Preface of an old Pennsylvania Almanac, intitled, Poor Richard improved.**

COURTEOUS READER,

I have heard, that nothing gives an author so great pleasure, as to find his works respectfully quoted by others. Judge, then, how much I must have been gratified by an incident I am going to relate to you. I stopped my horse lately, where a great number of people were collected at an auction of merchant's goods. The hour of sale not being come, they were conversing on the badness of the times; and one of the company called to a plain clean old man, with white locks, 'Pray Father Abraham, what think you of the times? Will not these heavy taxes quite ruin the country? How shall we ever be able to pay them? What would you advise us to do?'—Father Abraham stood up, and replied, 'If you would have my advice, I will give it to you in short, "for a word to the wise is enough," as poor Richard says.' They joined in desiring him to speak his mind, and gathering round him, he proceeded as follows:

'Friends,' says he 'the taxes are indeed, very heavy, and, if those laid on by the government were the only ones we had to pay, we might more easily discharge them; but we have many others, and much more grievous to some of us. We are taxed twice as much by our idleness, three times as much by our pride, and four times as much by our folly; and from these taxes the commissioners cannot ease or deliver us, by allowing an abatement. However let us hearken to good advice, and something may be done for us; "God helps those who helps themselves," as poor Richard says.

'1. It would be thought a hard government that should tax its people one tenth part of their time, to be employed in its service; but idleness taxes many of us much more; sloth, by bringing on diseases, absolutely shortens life. "Sloth, like rust, consumes faster than labour wears, while the used key is always bright," as poor Richard says. "But dost thou love life, then do not squander time, for that is the stuff life is made of," as poor Richard says. How much more than is necessary do we spend in sleep! forgetting, that "the sleeping fox catches no poultry, and that there will be sleeping enough in the grave," as poor Richard says.

"If time be of all things the most precious, wasting time must be," as poor Richard says, "the greatest prodigality;" since, as he elsewhere tells us, "lost time is never found again; and what we call *time enough* always proves little enough:" let us then up and be doing, and doing to the purpose; so by diligence shall we do more with less perplexity. "Sloth makes all things difficult, but industry all easy; and he that riseth late must trot all day, and shall scarce overtake his business at night; while laziness travels so slowly, that poverty soon overtakes him. Drive thy business, let not that drive thee; and early to bed and early to rise, makes a man healthy, wealthy, and wise," as poor Richard says.

'So what signifies wishing and hoping for better times? We may make these times better, if we bestir ourselves. "Industry need not wish, and he that lives upon hope will die fasting. There are no gains without pains; then help hands, for I have no lands," or, if I have, they are smartly taxed. "He that hath a trade, hath an estate; and he that hath a calling hath an office of profit and honour," as poor Richard says; but then trade must be worked at, and the calling well followed, or neither the estate nor the office will enable us to pay our taxes. If we are industrious, we shall never starve; for, "at the working man's house, hunger looks in but dares not enter." Nor will the bailiff or the constable enter, for industry pays debts, while despair increaseth them." What though you have found no treasure, nor has any rich relation left you a legacy, "diligence is the mother of good luck, and God gives all things to industry. Then plough deep, while sluggards sleep, and you shall have corn to sell and to keep." Work while it is called to-day, for you know not how much you may be hindered to-morrow. "One to day is worth two to-morrows," as poor Richard says; and farther, "never leave that till to morrow, which you can do to-day." If you were a servant, would you not be ashamed that a good master should catch you idle? Are you then your own master? Be ashamed to catch yourself idle, when there is so much to be done for yourself, your family, your country and your king. Handle your tools without mittens; remember, that, "the cat in gloves catches no mice," as poor Richard says. It is true, there is much to be done, and perhaps you are weak handed; but stick to it steadily, and you will see great effects, for "constant dropping wears away stones; and by diligence and patience the mouse ate in two the cable; and little strokes fell great oaks."

'But what madness must it be to run in debt for these superfluities! We are offered by the terms of this sale six months credit; and that perhaps has induced some of us to attend it because we cannot spare the ready money, and hope now to be fine without it. But ah! think what you do when you run in debt; you give to another power over your liberty. If you cannot pay at the time, you will be ashamed to see your creditor, you will be in fear when you speak to him, when you will make poor pitiful sneaking excuses, and by degrees come to lose your veracity, and sink into base, downright lying; for, "the second vice is lying; the first is running in debt," as poor Richard says; and again to the same purpose, "lying rides upon the debt's back; whereas a freeborn Englishman ought not to be ashamed nor afraid to see or speak to any man living. But poverty often deprives a man of all spirit and virtue. "It is hard for an empty bag to stand upright. What would you think of that prince, or of that government, who should issue an edict forbidding you to dress like a gentleman or gentlewoman, on pain of imprisonment or servitude? Would you not say, that you were free, have a right, to dress as you please, and that such an edict would be a breach of your privileges, and such a government tyrannical? And yet you are about to put yourself under the tyranny, when you run in debt for such dress! your creditor has authority, at his pleasure, to deprive you of your liberty, by confining you in goal for life, or by selling you for a servant, if you should not be able to pay him. When you have got your bargain you may, perhaps, think little of payment; but as poor Richard says, "creditors have better memories than debtors; creditors are a superstitious sect, great observers of set days and times." The day comes round before you are aware, and the demand is made before you are prepared to satisfy it; or, if you bear your debt in mind, the term, which at first seemed so long, will as it lessons, appear extremely short; time will seem to have added wings to his heels as well as to his shoulders. "Those have a short lent, who owe money to be paid at Easter." At present, perhaps you may think yourselves in thriving circumstances, and that you can bear a little extravagance without injury; but

"For age and want save while you may,
No morning sun lasts a whole day."

Gain may be temporary and uncertain, but ever, while you live, expense is certain and constant; and, "it is easier to build two chimneys than to keep one in fuel," as poor Richard says: so, "rather go to bed supperless than rise in debt."

"Get what you can, and what you get hold,
'Tis the stone that will turn all your lead into gold."

And when you have got the philosopher's stone, sure you will no longer complain of bad times, or the difficulty of paying taxes.

IV. This doctrine, my friends, is reason and wisdom; but, after all, do not depend too much upon your own industry, and frugality, and prudence, though excellent things: for they may be blasted, without the blessing of heaven; and therefore ask that blessing humbly, and be not uncharitable to those that at present seem to want it, but comfort and help them. Remember Job suffered and was afterwards prosperous.

'And now, to conclude, "experience keeps a dear school, but fools will learn in no other," as poor Richard says, and scarce in that; for it is true "we may give advice, but we cannot give conduct:" however, remember this, "they that will not be counselled cannot be helped;" and farther, that "if you will not hear reason, she will surely rap your knuckles," as poor Richard says.'

Thus the old gentleman ended his harangue. The people heard it, and approved the doctrine; and immediately practised the contrary, just as if it had been a common sermon, for the auction opened and they began to buy extravagantly. I found the good man had thoroughly studied my almanacs, and digested all I had dropt on those topics during the course of twenty-five years. The frequent mention he made of me must have tired any one else; but my vanity was wonderfully delighted with it, though I was conscious, that not a tenth part of the wisdom was my own, which he ascribed to me, but rather the gleanings that I had made of the sense of all ages and nations. However, I resolved to be the better for the echo of it; and, though I had at first determined to buy stuff for a new coat, I went away, resolved to wear my old one a little longer. Reader, if thou wilt do the same, thy profit will be as great as mine. I am, as ever,

Thine to serve thee,
RICHARD SAUNDERS.

* Dr. Franklin for many years published the Pennsylvania Almanac, called *Poor Richard* [*Saunders,*] and furnished it with various sentences and proverbs, which had principal relation to the topics of "industry, attention to one's own business, and frugality." The whole or chief of these sentences and proverbs he at last collected and digested in the above general preface, which were read with much avidity and profit; and perhaps tended more to the formation of a national character in America, than any other cause.

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FOR
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